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30jun10 12:34:20 User208760 Session D3194.1  
\$0.58 0.154 DialUnits File1  
\$0.58 Estimated cost File1  
\$0.02 TELNET  
\$0.60 Estimated cost this search  
\$0.60 Estimated total session cost 0.154 DialUnits

File 410:The Chronolog 1991-2010/ Mar  
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\$0.03 Estimated cost this search  
\$0.63 Estimated total session cost 0.269 DialUnits

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File 5:Biosis Previews(R) 1926-2010/Jun W3  
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E4 1 AU=SACKSTEIN ROBERT D  
E5 2 AU=SACKSTEIN ROBERTO  
E6 6 AU=SACKSTEIN, R.  
E7 48 AU=SACKSTEIN, ROBERT  
E8 1 AU=SACKSTEIN, ROBERTO  
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E11 1 AU=SACKSTON WALLY E  
E12 9 AU=SACKSTON, W. E.

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2 AU=SACKSTEIN R.D.  
151 AU=SACKSTEIN ROBERT

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S2      34 S1 AND (HCELL)
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S3      21 RD S2 (unique items)
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3/7/1 (Item 1 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0021105732 BIOSIS NO.: 200900447169  
Glycosyltransferase-programmed stereosubstitution (GPS) to create  
HCELL: engineering a roadmap for cell migration  
AUTHOR: Sackstein Robert (Reprint)  
AUTHOR ADDRESS: Brigham and Womens Hosp, Dept Dermatol, Harvard Inst Med,  
77 Ave Louis Pasteur, Boston, MA 02115 USA\*\*USA  
AUTHOR E-MAIL ADDRESS: Rsackstein@rics.bwh.harvard.edu  
JOURNAL: Immunological Reviews 230 p51-74 JUL 2009 2009  
ISSN: 0105-2896  
DOCUMENT TYPE: Article; Literature Review  
RECORD TYPE: Abstract  
LANGUAGE: English

**ABSTRACT:** During evolution of the vertebrate cardiovascular system, the vast endothelial surface area associated with branching vascular networks mandated the development of molecular processes to efficiently and specifically recruit circulating sentinel host defense cells and tissue repair cells at localized sites of inflammation/tissue injury. The forces engendered by high-velocity blood flow commensurately required the evolution of specialized cell surface molecules capable of mediating shear-resistant endothelial adhesive interactions, thus literally capturing relevant cells from the blood stream onto the target endothelial surface and permitting subsequent extravasation. The principal effectors of these shear-resistant binding interactions comprise a family of C-type lectins known as 'selectins' that bind discrete sialofucosylated glycans on their respective ligands. This review explains the 'intelligent design' of requisite reagents to convert native CD44 into the sialofucosylated glycoform known as hematopoietic cell E-/L-selectin ligand (HCELL), the most potent E-selectin counter-receptor expressed on human cells, and will describe how ex vivo glycan engineering of HCELL expression may open the 'avenues' for the efficient vascular delivery of cells for a variety of cell therapies.

3/7/2 (Item 2 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0020748158 BIOSIS NO.: 200900088492  
Programming Stem Cell Migration: "Steering" Regenerative Therapeutics by Ex  
Vivo Glycan Engineering of HCELL  
AUTHOR: Sackstein Robert (Reprint)  
AUTHOR ADDRESS: Harvard Univ, Brigham and Womens Hosp, Sch Med, Boston, MA

02115 USA\*\*USA  
JOURNAL: Glycobiology 18 (11): p949 NOV 2008 2008  
CONFERENCE/MEETING: Annual Meeting of the Society-for-Glycobiology Ft  
Worth, TX, USA November 12 -15, 2008; 20081112  
SPONSOR: Soc Glycobiol  
ISSN: 0959-6658  
DOCUMENT TYPE: Meeting; Meeting Abstract  
RECORD TYPE: Citation  
LANGUAGE: English

3/7/3 (Item 3 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0020439296 BIOSIS NO.: 200800486235  
Colon carcinoma cells express multiple glycoforms of CD44: Structural  
biology of HCELL  
AUTHOR: Burdick Monica M (Reprint); Silvescu Cristina; Sackstein  
Robert  
AUTHOR ADDRESS: Ohio Univ, Athens, OH 45701 USA\*\*USA  
JOURNAL: Proceedings of the American Association for Cancer Research Annual  
Meeting 49 p463 APR 2008 2008  
CONFERENCE/MEETING: 99th Annual Meeting of the  
American-Association-for-Cancer-Research San Diego, CA, USA April 12 -16,  
2008; 20080412  
SPONSOR: Amer Assoc Canc Res  
ISSN: 0197-016X  
DOCUMENT TYPE: Meeting; Meeting Abstract  
RECORD TYPE: Citation  
LANGUAGE: English

3/7/4 (Item 4 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0020430682 BIOSIS NO.: 200800477621  
L-selectin-mediated lymphocyte-cancer cell interactions under low fluid  
shear conditions  
AUTHOR: Resto Vicente A; Burdick Monica M; Dagia Nilesh M; McCammon Susan D  
; Fennewald Susan M; Sackstein Robert (Reprint)  
AUTHOR ADDRESS: Harvard Univ, Skin Dis Res Ctr, 77 Ave Louis Pasteur,Rm  
671, Boston, MA 02115 USA\*\*USA  
AUTHOR E-MAIL ADDRESS: rsackstein@rics.bwh.harvard.edu  
JOURNAL: Journal of Biological Chemistry 283 (23): p15816-15824 JUN 6 2008  
2008  
ITEM IDENTIFIER: doi:10.1074/jbc.M708899200  
ISSN: 0021-9258  
DOCUMENT TYPE: Article  
RECORD TYPE: Abstract  
LANGUAGE: English

ABSTRACT: Cell migration in blood flow is mediated by engagement of  
specialized adhesion molecules that function under hemodynamic shear  
conditions, and many of the effectors of these adhesive interactions,  
such as the selectins and their ligands, are well defined. However, in  
contrast, our knowledge of the adhesion molecules operant under lymphatic  
flow conditions is incomplete. Among human malignancies, head and neck  
squamous cell cancer displays a marked predilection for locoregional  
lymph node metastasis. Based on this distinct tropism, we hypothesized

that these cells express adhesion molecules that promote their binding to lymphoid tissue under lymphatic fluid shear stress. Accordingly, we investigated adhesive interactions between these and other cancer cells and the principal resident cells of lymphoid organs, lymphocytes. Parallel plate flow chamber studies under defined shear conditions, together with biochemical analyses, showed that human head and neck squamous cell cancer cells express heretofore unrecognized L-selectin ligand(s) that mediate binding to lymphocyte L-selectin at conspicuously low shear stress levels of 0.07-0.08 dynes/cm<sup>2</sup>, consistent with lymphatic flow. The binding of head and neck squamous cancer cells to L-selectin displays canonical biochemical features, such as requirements for sialylation, sulfation, and N-glycosylation, but displays a novel operational shear threshold differing from all other L-selectin ligands, including those expressed on colon cancer and leukemic cells (e. g. \*\*\*HCELL\*\*\*). These data define a novel class of L-selectin ligands and expand the scope of function for L-selectin within circulatory systems to now include a novel activity within shear stresses characteristic of lymphatic flow.

3/7/5 (Item 5 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0020168552 BIOSIS NO.: 200800215491  
Ex vivo glycan engineering of membrane CD44 to create HCELL programs  
human mesenchymal stem cell trafficking to bone  
AUTHOR: Sackstein Robert (Reprint); Merzaban Jasmeen S; Cain Derek W;  
Dagia Nilesh M; Spencer Joela A; Lin Charles P; Wohlgemuth Roland  
AUTHOR ADDRESS: Brigham and Womens Hosp, Harvard Med Sch, Boston, MA 02115  
USA\*\*USA  
JOURNAL: Blood 110 (11, Part 1): p72A NOV 16 2007 2007  
CONFERENCE/MEETING: 49th Annual Meeting of the  
American-Society-of-Hematology Atlanta, GA, USA December 08 -11, 2007;  
20071208  
SPONSOR: Amer Soc Hematol  
ISSN: 0006-4971  
DOCUMENT TYPE: Meeting; Meeting Abstract  
RECORD TYPE: Abstract  
LANGUAGE: English

**ABSTRACT:** The proximate obstacle to realizing the potential benefits of stem cell-based regenerative therapeutics is to safely and efficiently deliver the cells where they are needed/required. Though transplantation of culture-expanded human mesenchymal stem cells (MSC) holds the potential for cure of generalized skeletal diseases such as osteogenesis imperfecta, clinical effectiveness has been constrained to date by the poor osteotropism (migration to bone) of infused MSCs. Tissue-specific migration is initiated by adhesive interactions mediated by molecules on the surface of blood-borne cells that are specialized to resist the shear forces of blood flow, the "homing receptors". The recruitment of circulating cells to bone occurs within the marrow, at specialized marrow vessels that constitutively express E-selectin, a lectin that recognizes sialofucosylated determinants on its respective ligand(s). To gain insight on the expression and function of homing receptors on human MSC, we performed flow cytometry and Western blot analysis, together with parallel plate flow chamber studies under physiologic, shear conditions. Whereas human hematopoietic progenitor cells (HPC) characteristically display the E-selectin ligands CLA and HCELL, which are alpha(2,3)-sialyl-alpha(1,3)-fucosylated glycoforms of PSGL-1 and CD44 respectively, biochemical and functional studies showed that human MSC

express no E-selectin ligands and are devoid of PSGL-1. We also found that human MSC did not express many effectors of cellular trafficking to Marrow present on HPC, such as LFA-1, LPAM-1 ( $\alpha(4)\beta(7)$ ) nor the chemokine receptor CXCR4, but did express VLA-4 and, notably, display a CD44 glycoform bearing  $\alpha(2,3)$ -sialyllectosamine modifications that can serve as an acceptor for exogenous fucosylation. Employing an  $\alpha(1,3)$ -fucosyltransferase preparation and enzymatic conditions specifically designed for treating live cells, the native human MSC surface CD44 glycoform was converted to the E-selectin ligand HCELL with concomitant induction of potent E-selectin-dependent shear-resistant rolling interactions on activated endothelium, without effects on MSC viability or multipotency. As observed by real-time intravital microscopy in immunocompromised (NOD/SCID) mouse hosts, intravenously infused HCELL+ human MSCs homed robustly to bone with marrow infiltrates evident within hours of infusion, whereas unmodified MSC and HCELL+ MSC treated with sialidase (which eliminates E-selectin binding) showed negligible rolling on marrow vessels and did not extravasate. Alignment of extravasated \*\*\*HCELL\*\*\* + human MSC along the endosteal surface was observed, with rare differentiation to osteoblasts as evidenced by immunohistochemical staining for human osteocalcin. These results indicate that despite absence of CXCR4 and many other effectors of cellular trafficking to marrow, osteotropism of systemically administered human MSC was conferred by ex vivo cell surface carbohydrate modification of a single glycoprotein, CD44, rendering the potent E-selectin ligand \*\*\*HCELL\*\*\*. Our findings unveil a readily translatable roadmap for programming MSC trafficking, thus overcoming a critical, barrier in use of these cells for regenerative therapeutics of systemic skeletal diseases.

3/7/6 (Item 6 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0020118956 BIOSIS NO.: 200800165895  
Ex vivo glycan engineering of CD44 programs human multipotent mesenchymal stromal cell trafficking to bone  
AUTHOR: Sackstein Robert (Reprint); Merzaban Jasmeen S; Cain Derek W; Dagia Niles M; Spencer Joel A; Lin Charles P; Wohlgemuth Roland  
AUTHOR ADDRESS: Brigham and Womens Hosp, Dept Dermatol, 75 Francis St, Boston, MA 02115 USA\*\*USA  
AUTHOR E-MAIL ADDRESS: rsackstein@rics.bwh.harvard.edu  
JOURNAL: Nature Medicine 14 (2): p181-187 FEB 2008 2008  
ITEM IDENTIFIER: doi:10.1038/nm1703  
ISSN: 1078-8956  
DOCUMENT TYPE: Article  
RECORD TYPE: Abstract  
LANGUAGE: English

**ABSTRACT:** The capacity to direct migration ('homing') of blood-borne cells to a predetermined anatomic compartment is vital to stem cell based tissue engineering and other adoptive cellular therapies. Although multipotent mesenchymal stromal cells (MSCs, also termed 'mesenchymal stem cells') hold the potential for curing generalized skeletal diseases, their clinical effectiveness is constrained by the poor osteotropism of infused MSCs (refs. 1-3). Cellular recruitment to bone occurs within specialized marrow vessels that constitutively express vascular E-selectin(4,5), a lectin that recognizes sialofucosylated determinants on its various ligands. We show here that human MSCs do not express E-selectin ligands, but express a CD44 glycoform bearing  $\alpha(2,3)$ -sialyl modifications. Using an  $\alpha(1,3)$ -fucosyltransferase preparation and

enzymatic conditions specifically designed for treating live cells, we converted the native CD44 glycoform on MSCs into hematopoietic cell E-selectin/L-selectin ligand (HCELL) (6), which conferred potent E-selectin binding without effects on cell viability or multipotency. Real-time intravital microscopy in immunocompromised (NOD/SCID) mice showed that intravenously infused HCELL+ MSCs infiltrated marrow within hours of infusion, with ensuing rare foci of endosteally localized cells and human osteoid generation. These findings establish that the HCELL glycoform of CD44 confers tropism to bone and unveil a readily translatable roadmap for programming cellular trafficking by chemical engineering of glycans on a distinct membrane glycoprotein.

3/7/7 (Item 7 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0019598682 BIOSIS NO.: 200700258423  
HCELL is the major E- and L-selectin ligand expressed on human hematopoietic progenitor cells and colon carcinoma cells.  
AUTHOR: Chu Julia T (Reprint); Burdick Monica M; Sackstein Robert  
AUTHOR ADDRESS: Brigham and Womens Hosp, Dept Med, Boston, MA 02115 USA\*\*  
USA  
JOURNAL: Blood 108 (11, Part 1): p477A-478A NOV 16 2006 2006  
CONFERENCE/MEETING: 48th Annual Meeting of the  
American-Society-of-Hematology Orlando, FL, USA December 09 -12, 2006;  
20061209  
SPONSOR: Amer Soc Hematol  
ISSN: 0006-4971  
DOCUMENT TYPE: Meeting; Meeting Poster  
RECORD TYPE: Abstract  
LANGUAGE: English

ABSTRACT: Selectins are a class of cell surface proteins specialized to mediate adhesive interactions under hydrodynamic shear flow conditions, and are critical in the trafficking of hematopoietic progenitor cells (HPC) into the bone marrow and dissemination of cancer cells in hematogenous metastasis, among other biological events. More specifically, E-selectin expressed by endothelial cells has been shown to mediate shear-resistant tethering/rolling of cells recruited from the fluid stream, while L-selectin expressed by distinct leukocyte subsets has been variously shown to mediate lymph node homing, as well as the formation of heterotypic cell aggregates in bulk flow. We have previously reported that the primitive CD34+ human hematopoietic progenitor cell (HPC) line KG1a exhibits stronger E-/L-selectin ligand activities than HL60, a more differentiated CD34- human hematopoietic cell line. These findings were attributed to the HPC/KG1a restricted expression of the sialofucosylated CD44 glycoform termed HCELL (Hematopoietic Cell E-/L-selectin Ligand), since both cell lines express approximately equivalent levels of CD44 and the well-characterized selectin ligand P-selectin glycoprotein ligand-1 (PSGL-1). To directly assess whether HCELL functions as the high affinity E-/L-selectin ligand on KG1a cells, HCELL expression was silenced using lentiviral siRNA targeting CD44, and the E-/L-selectin ligand activities were subsequently compared between untreated and transduced KG1a cells. CD44 siRNA transduction of KG1a cells decreased CD44 (i.e. \*\*\*HCELL\*\*\* ) expression levels > 90% mean fluorescence intensity (MFI) relative to untreated and vector alone-transduced cells as measured by flow cytometry. CD44 targeting was specific, as expression of PSGL-1 was not reduced upon CD44 siRNA transduction, nor were CD29, CD49d, or CD49e levels affected. Functionally, at venous shear stress levels (< 4 dyn/cm<sup>2</sup>), CD44

siRNA-transduced KG1a cells rolled markedly faster than untreated and vector alone-transduced cells on a monolayer of E-selectin transfected Chinese hamster ovary (CHO-E) cells. At arterial and pathological shear (> 4 dyn/cm<sup>2</sup>), control cells maintained rolling interactions on CHO-E cells, whereas CD44 siRNA-transduced cells readily detached from the monolayer. Comparable results were obtained for L-selectin-dependent peripheral blood mononuclear cell rolling on CD44 siRNA-transduced versus untreated and vector alone-transduced KG1a cells. Furthermore, the HCELL-negative HL60 cells supported similarly weak binding of E- and L-selectin as CD44 siRNA-transduced KG 1a cells. Collectively, the data directly show that HCELL is the predominant ligand that stabilizes shear-resistant HPC binding to E- and L-selectin. We have also previously reported that the human colon carcinoma cell line LS174T expresses \*\*\*HCELL\*\*\*. To examine whether \*\*\*HCELL\*\*\* on LS174T cells functions as a selectin ligand, we again suppressed expression through targeted gene silencing by lentiviral CD44 siRNA transduction. Similar to KG1a cells, specific CD44/HCELL silencing on LS174T cells was achieved (>90% reduction in MFI relative to untreated and vector controls), resulting in significant inhibition of E- and L-selectin binding capabilities at physiologically relevant shear stress levels. In summary, these findings demonstrate that HCELL is the most potent E-/L-selectin ligand mediating shear-resistant adhesive interactions on human cells.

3/7/8 (Item 8 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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19372124 BIOSIS NO.: 200700031865  
G-CSF induces E-selectin ligand expression on human myeloid cells  
AUTHOR: Dagia Nilesh M; Gadhoun Samah Z; Knoblauch Christine A; Spencer  
Joel A; Zamiri Parisa; Lin Charles P; Sackstein Robert (Reprint)  
AUTHOR ADDRESS: Harvard Univ, Sch Med, Brigham and Womens Hosp, Dept  
Dermatol, 77 Ave Louis Pasteur, Room 671, Boston, MA 02115 USA\*\*USA  
AUTHOR E-MAIL ADDRESS: rsackstein@rics.bwh.harvard.edu  
JOURNAL: Nature Medicine 12 (10): p1185-1190 OCT 2006 2006  
ISSN: 1078-8956  
DOCUMENT TYPE: Article  
RECORD TYPE: Abstract  
LANGUAGE: English

ABSTRACT: Clinical use of G-CSF can result in vascular and inflammatory complications(1-7). To investigate the molecular basis of these effects, we analyzed the adherence of G-CSF-mobilized human peripheral blood leukocytes (ML) to inflamed (TNF-alpha - stimulated) vascular endothelium. Studies using parallel plate assays under physiologic flow conditions and intravital microscopy in a mouse inflammation model each showed that ML take part in heightened adhesive interactions with endothelium compared to unmobilized (native) blood leukocytes, mediated by markedly increased E-selectin receptor-ligand interactions. Biochemical studies showed that ML express the potent E-selectin ligand \*\*\*HCELL\*\*\* (reference 8) and another, previously unrecognized similar to 65-kDa E-selectin ligand, and possess enhanced levels of transcripts encoding glycosyltransferases (ST3GalIV, FucT-IV and FucT-VII) conferring glycan modifications associated with E-selectin ligand activity. Enzymatic treatments and physiologic binding assays showed that HCELL and the similar to 65-kDa E-selectin ligand contribute prominently to the observed G-CSF-induced myeloid cell adhesion to inflamed endothelium. Treatment of normal human bone marrow cells with a pharmacokinetically relevant concentration of G-CSF in vitro(9,10)

resulted in increased expression of these two molecules, coincident with increased transcripts encoding pertinent glycosyltransferases and heightened E-selectin binding. These findings provide direct evidence for a role of G-CSF in the induction of E-selectin ligands on myeloid cells, thus providing mechanistic insight into the pathobiology of G-CSF complications.

3/7/9 (Item 9 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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19252010 BIOSIS NO.: 200600597405  
Expression of HCELL confers shear-resistant E- and L-selectin ligand activity on colon carcinoma cells  
AUTHOR: Burdick Monica M (Reprint); Chu Julia T; Knoblauch Christine A; Sackstein Robert  
AUTHOR ADDRESS: Brigham and Womens Hosp, Boston, MA 02115 USA\*\*USA  
JOURNAL: Proceedings of the American Association for Cancer Research Annual Meeting 47 p801 APR 2006 2006  
CONFERENCE/MEETING: 97th Annual Meeting of the American-Association-for-Cancer-Research (AACR) Washington, DC, USA April 01 -05, 2006; 20060401  
SPONSOR: Amer Assoc Canc Res  
ISSN: 0197-016X  
DOCUMENT TYPE: Meeting; Meeting Abstract  
RECORD TYPE: Citation  
LANGUAGE: English

3/7/10 (Item 10 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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19125608 BIOSIS NO.: 200600471003  
HCELL is the major E- and L-selectin ligand expressed on LS174T colon carcinoma cells  
AUTHOR: Burdick Monica M; Chu Julia T; Godar Samuel; Sackstein Robert (Reprint)  
AUTHOR ADDRESS: Harvard Univ, Inst Med, 77 Ave Louis Pasteur,Rm 671, Boston, MA 02115 USA\*\*USA  
AUTHOR E-MAIL ADDRESS: rsackstein@rics.bwh.harvard.edu  
JOURNAL: Journal of Biological Chemistry 281 (20): p13899-13905 MAY 19 2006 2006  
ISSN: 0021-9258  
DOCUMENT TYPE: Article  
RECORD TYPE: Abstract  
LANGUAGE: English

ABSTRACT: Engagement of vascular E-selectin and leukocyte L-selectin with relevant counter-receptors expressed on tumor cells contributes to the hematogenous spread of colon carcinoma. We recently demonstrated that the LS174T colon carcinoma cell line expresses the CD44 glycoform known as hematopoietic cell E-/L-selectin ligand (HCELL), which functions as a high affinity E- and L-selectin ligand on these cells. To define the contribution of HCELL to selectin-mediated adhesion on intact tumor cells, we measured the binding of LS174T cells transduced with CD44 short interfering RNA (siRNA) or with vector alone to 6-h interleukin-1 beta-stimulated human umbilical vein endothelial cells (HUVEC) and to human peripheral blood mononuclear cells (PBMC) under physiological flow conditions. LS174T cell attachment to HUVEC was entirely

E-selectin-dependent, and PBMC tethering to tumor cell monolayers was completely L-selectin-dependent. At physiological shear stress, CD44 siRNA transduction led to a similar to 50% decrease in the number of LS174T cells binding to stimulated HUVEC relative to vector alone-transduced cells. CD44 siRNA-transduced cells also rolled significantly faster than vector-transduced cells on HUVEC, indicating prominent HCELL participation in stabilizing tumor cell-endothelial adhesive interactions against fluid shear. Furthermore, \*\*\*HCELL\*\*\* was identified as the principal L-selectin ligand on LS174T cells, as PBMC binding to CD44 siRNA-transduced tumor cells was reduced similar to 80% relative to vector-transduced cells. These data indicate that expression of HCELL confers robust and predominant tumor cell binding to E- and L-selectin, highlighting a central role for HCELL in promoting shear-resistant adhesive interactions essential for hematogenous cancer dissemination.

3/7/11 (Item 11 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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19001424 BIOSIS NO.: 200600346819  
Comparative analysis of sialomucin and glycolipid E-selectin ligand activities: Effects of HCELL knockdown  
AUTHOR: Burdick Monica M (Reprint); Chu Julia T; Knoblauch Christine A; Sackstein Robert  
AUTHOR ADDRESS: Brigham and Womens Hosp, Dept Dermatol, Boston, MA 02115 USA\*\*USA  
JOURNAL: Glycobiology 15 (11): p1249 NOV 2005 2005  
CONFERENCE/MEETING: Meeting of the Society-for-Glycobiology Boston, MA, USA November 09 -12, 2005; 20051109  
SPONSOR: Soc Glycobiol  
ISSN: 0959-6658  
DOCUMENT TYPE: Meeting; Meeting Abstract  
RECORD TYPE: Citation  
LANGUAGE: English

3/7/12 (Item 12 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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18669741 BIOSIS NO.: 200600015136  
CD44 on LS174T colon carcinoma cells possesses E-selectin ligand activity  
AUTHOR: Hanley William D; Burdick Monica M; Konstantopoulos Konstantinos; Sackstein Robert (Reprint)  
AUTHOR ADDRESS: Harvard Inst Med, 77 Ave Louis Pasteur, Room 671, Boston, MA 02115 USA\*\*USA  
AUTHOR E-MAIL ADDRESS: kkonstal@jhu.edu  
JOURNAL: Cancer Research 65 (13): p5812-5817 JUL 1 2005 2005  
ISSN: 0008-5472  
DOCUMENT TYPE: Article  
RECORD TYPE: Abstract  
LANGUAGE: English

ABSTRACT: Metastasis of circulating tumor cells requires a multistep cascade of events initiated by adhesion of tumor cells to the vascular endothelium of involved tissues. This process occurs under the forces of blood flow and is promoted by adhesion molecules specialized to interact under shear conditions. The endothelial molecule E-selectin is a major mediator of these adhesive events, and there is strong evidence that

E-selectin receptor-ligand interactions contribute to the formation of metastasis. However, little is known about the identity of E-selectin ligand(s) expressed on cancer cells. To address this issue, we did SDS-PAGE analysis of membrane proteins, metabolic inhibition studies, and blot rolling assays of LS174T, a colon carcinoma cell line known to interact with E-selectin under physiologic flow conditions. Our studies show that LS174T cells express the hematopoietic cell E/L-selectin (HCELL) glycoform of CD44, which functions as a high-affinity E-selectin glycoprotein ligand on these cells. However, in contrast to the HCELL glycoform on human hematopoietic progenitor cells, which expresses carbohydrate-binding determinant(s) for E-selectin primarily on N-glycans of standard CD44, the relevant determinant(s) on LS174T cells is expressed on O-glycans and is predominantly found on variant isoforms of CD44 (CD44v). Our finding that tumor-associated CD44 splice variant(s) express E-selectin ligand activity provides novel perspectives on the biology of CD44 in cancer metastasis.

3/7/13 (Item 13 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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18075717 BIOSIS NO.: 200400443636  
The bone marrow is akin to skin: HCELL and the biology of  
hematopoietic stem cell homing  
AUTHOR: Sackstein Robert (Reprint)  
AUTHOR ADDRESS: Inst Med, Harvard Univ, 77 Ave Louis Pasteur, Room 671,  
Boston, MA, 02115, USA\*\*USA  
AUTHOR E-MAIL ADDRESS: rsackstein@rics.bwh.harvard.edu  
JOURNAL: Journal of Investigative Dermatology Symposium Proceedings 9 (3):  
p215-223 September 2004 2004  
MEDIUM: print  
ISSN: 1087-0024 \_(ISSN print)  
DOCUMENT TYPE: Article; Literature Review  
RECORD TYPE: Abstract  
LANGUAGE: English

ABSTRACT: The recent findings that adult stem cells are capable of generating new blood vessels and parenchymal cells within tissues they have colonized has raised immense optimism that these cells may provide functional recovery of damaged organs. The use of adult stem cells for regenerative therapy poses the challenging task of getting these cells into the requisite sites with minimum morbidity and maximum efficiency. Ideally, tissue-specific colonization could be achieved by introducing the stem cells intravascularly and exploiting the native physiologic processes governing cell trafficking. Critical to the success of this approach is the use of stem cells bearing appropriate membrane molecules that mediate homing from vascular to tissue compartments. Hematopoietic stem cells (HSC) express a novel glycoform of CD44 known as hematopoietic cell E-/L-selectin ligand ( \*\*\*HCELL\*\*\* ). This molecule is the most potent E-selectin ligand natively expressed on any human cell. This article reviews our current understanding of the molecular basis of HSC homing and will describe the fundamental "roll" of HCELL in opening the avenues for efficient HSC trafficking to the bone marrow, the skin and other extramedullary sites.

3/7/14 (Item 14 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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17794738 BIOSIS NO.: 200400162079  
CD44/HCELL is an E- and L-selectin ligand on murine hematopoietic progenitor cells.  
AUTHOR: Cain Derek W (Reprint); Schreiber Taylor H (Reprint); Dimitroff Charles J (Reprint); Chung Christine (Reprint); Otero Jaclyn (Reprint); Sackstein Robert (Reprint)  
AUTHOR ADDRESS: Department of Dermatology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA\*\*USA  
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SPONSOR: American Society of Hematology  
ISSN: 0006-4971  
DOCUMENT TYPE: Meeting; Meeting Abstract  
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**ABSTRACT:** The selectins (L-, E- and P-selectin) are becoming increasingly recognized for playing key roles in hematopoiesis. In mice and humans, expression of the leukocyte selectin, L-selectin, is characteristic of early hematopoietic progenitor cells (HPCs) and is associated with higher clonogenic activity of HPCs, whereas E- and P-selectin are constitutively expressed on bone marrow endothelium where they mediate HPC migration into bone marrow. Previous studies from our laboratory have demonstrated that a specialized glycoform of CD44, designated HCELL (Hematopoietic Cell E- and L-selectin Ligand), is expressed on early HPCs and is the most potent E- and L-selectin ligand expressed on any cell. Post-translational glycosylations on CD44, including alpha1,3-fucosylated and alpha2,3-sialylated N-glycans, confer the HCELL phenotype identified by E- and L-selectin binding capability and reactivity to the anti-sialyl Lewis X (sLex) monoclonal antibody HECA-452. To date, no HECA-452-reactive murine glycoproteins have been described, raising questions regarding the expression of \*\*\*HCELL\*\*\* on murine cells. To address this issue, we performed SDS-PAGE and Western blot analysis of membrane proteins from FDCPmix, a primitive murine hematopoietic cell line. A distinct HECA-452 reactive band was observed which comigrated with the murine standard hematopoietic CD44 isoform. To obtain direct information on selectin ligand activity, CD44 was immunoprecipitated from FDCPmix cells and the isolated protein was analyzed for P-, E-, and L-selectin binding by Stamper-Woodruff and laminar flow chamber assays. Similar to CD44 expression on primitive human HPCs, CD44 from FDCPmix cells showed no P-selectin ligand activity, but possessed potent E- and L-selectin ligand activity. Enzymatic digestions and studies using metabolic inhibitors of glycosylation revealed that the relevant functional carbohydrate modification(s) on FDCPmix CD44 are displayed on N-glycosylations, in parallel to that of \*\*\*HCELL\*\*\* on human HPCs. Notably, no selectin binding determinants were displayed on O-glycans on either human or mouse \*\*\*HCELL\*\*\*. To analyze expression of \*\*\*HCELL\*\*\* among normal murine HPCs, Stamper Woodruff assays were performed. As previously observed for human bone marrow, HCELL activity was identified only among lin- cells. The evident phylogenetic conservation of HCELL structure and distribution/expression suggests that HCELL plays similar role(s) as the principal ligand for E- and L-selectin-mediated adhesive interactions within the bone marrow of humans and mice, providing a valuable animal model to investigate the function of this novel E- and L-selectin ligand in normal and pathologic hematopoiesis.

16627075 BIOSIS NO.: 200200220586

Homing and hematopoiesis: HCELL is the principal E-selectin and L-selectin ligand of human hematopoietic stem cells

AUTHOR: Sackstein Robert (Reprint); Dimitroff Charles J (Reprint); Lee Jack Y (Reprint); Fuhlbrigge Robert C (Reprint); Parmar Kalindi; Mauch Peter M; Sandmaier Brenda M

AUTHOR ADDRESS: Dermatology and Medicine, Brigham and Women's Hospital, Boston, MA, USA\*\*USA

JOURNAL: Blood 98 (11 Part 1): p710a November 16, 2001 2001

MEDIUM: print

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SPONSOR: American Society of Hematology

ISSN: 0006-4971

DOCUMENT TYPE: Meeting; Meeting Abstract

RECORD TYPE: Abstract

LANGUAGE: English

**ABSTRACT:** The selectins are becoming increasingly recognized for playing key roles in hematopoiesis. The endothelial selectins, E- and P-selectin, are both constitutively expressed on bone marrow (BM) microvascular endothelium, where they help mediate hematopoietic progenitor cell (HPC) migration into BM. Expression of the leukocyte selectin, L-selectin, on human CD34+ HPCs is associated with higher clonogenic activity in *in vitro* assays and faster engraftment following BM transplantation. Human HPCs also express PSGL-1, a ligand for all three selectins, however, paradoxically, engagement of PSGL-1 appears to inhibit clonogenic activity of human HPCs. These published data, collectively, have prompted us to explore the structure and distribution of selectin ligands expressed on human HPCs. Utilizing a new shear-based adhesion assay system developed in our laboratory, we have analyzed the cell surface glycoproteins of normal human HPCs that mediate L-, E- and P-selectin binding. Normal BM cells were separated into various lineage- and lineage+ subsets by magnetic bead sorting, and also sorted by flow cytometry of "side-population" cells following Hoechst dye staining. Cell membrane proteins were resolved into component bands by SDS-PAGE, then blotted onto PVDF. The blot was then placed in a flow chamber apparatus, and L-selectin+lymphocytes or stably transfected CHO cells bearing E- or P-selectin (designated CHO-E and CHO-P, respectively) were introduced into the chamber under controlled flow conditions. Adhesive interactions between cells in flow and immobilized (blot) proteins were visualized by video microscopy. CHO-P adhesive interactions occurred only at bands corresponding to PSGL-1. Adhesive interactions using lymphocytes and CHO-E were also observed at bands corresponding to PSGL-1, but significantly more L- and E-selectin ligand activity was observed at a band of apprx100,000 mw, operationally named "Hematopoietic Cell E-/L-selectin Ligand" ( \*\*\*HCELL\*\*\* ). Mass spectroscopy analysis of this protein, confirmed by immunopurification, revealed that this E- and L-selectin ligand is a previously unrecognized glycoform of a well-characterized glycoprotein, CD44. In shear-based adhesion assays of purified protein or of protein expressed naturally on cell membranes, HCELL displays >5-fold more avidity for E- and for L-selectin compared to PSGL-1. Though CD44 is broadly expressed among normal human BM marrow cells, HCELL is expressed only on lineage- cells: its expression is characteristic of CD34+ cells, with highest expression in CD38-/lin- cells. Additionally, \*\*\*HCELL\*\*\* is expressed on CD34+ and CD34- subsets of "side-population" cells. The distinctive, restricted expression of HCELL among the subsets comprising the human

hematopoietic "stem" cell and its marked avidity for E- and L-selectin supports a role for this unique glycoform of CD44 as a BM "homing receptor" as well as being the principal ligand mediating L-selectin-dependent cell-cell adhesive events within the BM microenvironment.

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DIALOG(R)File 5:Biosis Previews(R)  
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16567681 BIOSIS NO.: 200200161192  
Differential L-selectin binding activities of human hematopoietic cell  
L-selectin ligands, HCELL and PSLG-1  
AUTHOR: Dimitroff Charles J; Lee Jack Y; Schor Kenneth S; Sandmaier Brenda  
M; Sackstein Robert (Reprint)  
AUTHOR ADDRESS: Harvard Institutes of Medicine, Harvard Skin Disease  
Research Center, 77 Ave. Louis Pasteur, Boston, MA, 02115, USA\*\*USA  
JOURNAL: Journal of Biological Chemistry 276 (50): p47623-47631 December  
14, 2001 2001  
MEDIUM: print  
ISSN: 0021-9258  
DOCUMENT TYPE: Article  
RECORD TYPE: Abstract  
LANGUAGE: English

**ABSTRACT:** Expression of L-selectin on human hematopoietic cells (HC) is associated with a higher proliferative activity and a more rapid engraftment after hematopoietic stem cell transplantation. Two L-selectin ligands are expressed on human HCs, P-selectin glycoprotein ligand-1 (PSGL-1) and a specialized glycoform of CD44 (hematopoietic cell E- and L-selectin ligand, \*\*\*HCELL\*\*\*). Although the structural biochemistry of HCELL and PSGL-1 is well characterized, the relative capacity of these molecules to mediate L-selectin-dependent adhesion has not been explored. In this study, we examined under shear stress conditions L-selectin-dependent leukocyte adhesive interactions mediated by HCELL and PSGL-1, both as naturally expressed on human HC membranes and as purified molecules. By utilizing both Stamper-Woodruff and parallel-plate flow chamber assays, we found that HCELL displayed a 5-fold greater capacity to support L-selectin-dependent leukocyte adherence across a broad range of shear stresses compared with that of PSGL-1. Moreover, L-selectin-mediated leukocyte binding to immunopurified HCELL was consistently >5-fold higher than leukocyte binding to equivalent amounts of PSGL-1. Taken together, these data indicate that HCELL is a more avid L-selectin ligand than PSGL-1 and may be the preferential mediator of L-selectin-dependent adhesive interactions among human HCs in the bone marrow.

3/7/17 (Item 1 from file: 399)  
DIALOG(R)File 399:CA SEARCH(R)  
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148198515 CA: 148(9)198515n PATENT  
A method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
INVENTOR(AUTHOR): Sackstein, Robert  
LOCATION: USA  
PATENT: PCT International ; WO 200811094 A2 DATE: 20080124  
APPLICATION: WO 2007US16352 (20070718) \*US 2006PV831525 (20060718)  
PAGES: 61pp. CODEN: PIXXD2 LANGUAGE: English

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C12N-0005/06	A	I	F	B	20060101	H	EP
A61K-0038/19	A	I	L	B	20060101	H	EP
A61K-0038/20	A	I	L	B	20060101	H	EP
A61K-0038/17	A	I	L	B	20060101	H	EP
A61K-0039/395	A	I	L	B	20060101	H	EP
A61P-0029/00	A	I	L	B	20060101	H	EP
A61P-0035/00	A	I	L	B	20060101	H	EP
A61P-0009/10	A	I	L	B	20060101	H	EP

DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BH; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DO; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; GT; HN; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LA; LC; LK; LR; LS; LT; LU; LY; MA; MD; ME; MG; MK; MN; MW; MX; MY; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS; RU; SC; SD; SE; SG; SK; SL; SM; SV; SY; TJ; TM; TN; TR; TT; TZ DESIGNATED REGIONAL: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LT; LU; LV; MC; MT; NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM

SECTION:

CA263005 Pharmaceuticals

CA215XXX Immunochemistry

IDENTIFIERS: selectin ligand expression modulation cytokine induction glycosylation enzyme, GCSF glycosyltransferase induction selectin ligand HCELL, tissue regeneration enhancement cytokine induction selectin ligand glycosylation, engraftment enhancement cytokine induction selectin ligand glycosylation

DESCRIPTORS:

Hematopoietic precursor cell... Stem cell... containing cytokine, treating; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Selectins...

E-, glycoprotein and glycolipid ligands of; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Ligands...

E-selectin, augmenting; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Transplant and Transplantation...

enhancing engraftment; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Regeneration, animal...

enhancing; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Antibodies and Immunoglobulins...

fragments, Fab, inhibiting E-selectin interactions with ligands by; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses the drug toxicity...

G-CSF, reducing, by inhibiting E-selectin interactions with ligands; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses the

Selectins...

glycoprotein and glycolipid ligands of; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Ligands...

HCELL (hematopoietic cell E-/L-selectin ligand); method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

CD44(antigen)...

HCELL glycoform, E-/L-selectin ligand; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Antigens...

HECA-452 epitope, as selectin ligand, modulating expression of, method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Antibodies and Immunoglobulins... Antisense oligonucleotides...

inhibiting E-selectin interactions with ligands by; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Blood-group substances...

Le, as selectin ligand, augmenting; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Blood-group substances...

Lex, CD15, as selectin ligand, augmenting; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Blood-group substances...

Lex, sialyl, CD15, G-CSF induced sialidase which resulted in increased expression of; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enz

Selectins...

ligands, augmenting; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Cytokines... Interleukins... Interleukin 3...

method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Antibodies and Immunoglobulins...

monoclonal, HECA-452, modulating expression of E-selectin ligand by; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses th

Antibodies and Immunoglobulins...

monoclonal, VIM-2, modulating expression of E-selectin ligand by; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses there

Drug screening...

of agents specifically binding E-selectin; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Leukocyte...

peripheral blood, G-CSF treated, 65kDa glycoprotein (E-selectin ligand) isolated from; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation en

Animal tissue...

regeneration, enhancing; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Ligands...

selectin, augmenting; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

Glycosylation...

selectin ligand, modulating; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
Double stranded RNA...  
small interfering, inhibiting E-selectin interactions with ligands by; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
Transplant and Transplantation...  
stem cell, hematopoietic, uses in; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
Carbohydrates, biological studies...  
synthesis, inhibiting E-selectin interactions with ligands by inhibiting; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
Transcriptional regulation...  
transcriptional repression, glycosyltransferase, inhibiting E-selectin interactions with ligands by; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
Stem cell...  
transplant, hematopoietic, uses in; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
Injury...  
treating; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
Epitopes...  
VIM-2, as E-selectin ligand; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
Antigens...  
VIM-2 epitope, E-selectin ligand; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
Glycoproteins...  
65kDa, as E-selectin ligand, isolated from G-CSF-treated leukocytes; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
CAS REGISTRY NUMBERS:  
143011-72-7 glycosyltransferases expression induced by; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
83869-56-1 81627-83-0 9001-67-6 method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
9033-07-2 9032-92-2 modulating cytokine induction of; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
1003062-26-7 1003062-27-8 1003062-28-9 1003062-29-0 1003062-30-3 1003062-31-4 1003062-32-5 1003062-33-6 unclaimed nucleotide sequence; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof  
302788-42-7 unclaimed sequence; method of modulating expression of selectin ligands on cells by modulating cytokine induction of glycosylation enzymes, and uses thereof

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145342289 CA: 145(17)342289z PATENT

HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, a method of increasing the stem cell affinity for selectin, and therapeutic uses

INVENTOR(AUTHOR): Sackstein, Robert

LOCATION: USA

PATENT: U.S. Pat. Appl. Publ. ; US 20060210558 A1 DATE: 20060921

APPLICATION: US 2005272453 (20051110) \*US 2000PV240987 (20001018) \*US 2001PV297474 (20010611) \*US 200142421 (20011018) \*US 2004PV627464 (20041112) \*US 2005PV673982 (20050422)

PAGES: 70pp., Cont.-in-part of U.S. Ser. Number 42,421. CODEN: USXXCO

LANGUAGE: English

PATENT CLASSIFICATIONS:

CLASS: 424140100

IPC8 / +	Level	Value	Position	Status	Version	Action	Source	Office:
A61K-0039/00		A	I	F	B	20060101	20060921	H US
A61K-0039/395		A	I	L	B	20060101	20060921	H US
C12N-0005/08		A	I	L	B	20060101	20060921	H US
C07K-0014/705		A	I	L	B	20060101	20060921	H US

SECTION:

CA263005 Pharmaceuticals

CA201XXX Pharmacology

CA213XXX Mammalian Biochemistry

CA215XXX Immunochemistry

IDENTIFIERS: CD44 glycoform HCELL hematopoietic cell selectin ligand therapeutic, CD44H hematopoietic isoform selectin ligand stem cell transplantation

DESCRIPTORS:

RNA splicing...

alternative, CD44; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Gene therapy... Gene,animal...

CD44; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Selectins...

E-, identifying stem cells using; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Hematopoietic neoplasm... Inflammation... Anti-inflammatory agents...

Hematopoietic disorders... Neoplasm... Antitumor agents... Mammalia...

Biomarkers... Human... Antibodies and Immunoglobulins...

Susceptibility(genetic)...

HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Hematopoietic precursor cell...

HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of ICD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Tumor markers...

HCELL as; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

CD44(antigen)...

HCELL isoforms; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Transplant and Transplantation...

increasing engraftment potential of stem cell; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses  
Stem cell...

isolating; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Selectins...

L-; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Selectins...

ligands, HCELL; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Glycosylation...

of CD44, modulating; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Protein sequences...

of human CD44H isoform (HCELL); HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

Ligands...

selectin, HCELL; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

CAS REGISTRY NUMBERS:

909961-26-8 amino acid sequence; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

9032-92-2 Glycosidase, gene for; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

9033-07-2 Glycosyltransferase, gene for; HCELL (hematopoietic cell E-selectin/L-selectin ligand) glycoforms of CD44, method of increasing stem cell affinity for selectin, and therapeutic uses

3/7/19 (Item 3 from file: 399)

DIALOG(R)File 399:CA SEARCH(R)

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145096397 CA: 145(6)96397w PATENT

CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

INVENTOR(AUTHOR): Sackstein, Robert

LOCATION: USA

ASSIGNEE: The Brigham and Women's Hospital, Inc.

PATENT: PCT International ; WO 200668720 A2 DATE: 20060629

APPLICATION: WO 2005US40652 (20051110) \*US 200142421 (20011018) \*US

2004PV627464 (20041112) \*US 2005PV673982 (20050422)

PAGES: 137 pp. CODEN: PIXXD2 LANGUAGE: English

PATENT CLASSIFICATIONS:

IPC/R/8 + Level Value Position Status Version Action Source Office:

A61K-0048/00 A I F B 20060101

H US

DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ; LC; LK;

LR; LS; LT; LU; LV; LY; MA; MD; MG; MK; MN; MW; MX; MZ; NA; NG; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RU; SC; SD; SE; SG; SK; SL; SM; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA DESIGNATED REGIONAL: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LT; LU; LV; MC; NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GO; GW; ML; MR; NE; SN; TD; TG; BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM

SECTION:

CA201001 Pharmacology

CA213XXX Mammalian Biochemistry

CA215XXX Immunochemistry

CA263XXX Pharmaceuticals

IDENTIFIERS: CD44 glycoforms HCELL hematopoietic cell selectin ligand therapeutic, CD44H hematopoietic isoform selectin ligand stem cell isolating

DESCRIPTORS:

Ricins...

A, HCELL antibody conjugates; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

RNA splicing...

alternative, CD44; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Antibodies and Immunoglobulins...

anti-CD44, identifying stem cells by; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Hematopoietic precursor cell... Stem cell... Mammalia... Anti-inflammatory agents... Leukemia... Antitumor agents... Human... Inflammation...

Hematopoietic disorders... Neoplasm... Hematopoietic neoplasm...

Parkinson's disease... Diabetes mellitus... Liver,disease... Diabetes insipidus... Mammary gland,neoplasm... Lung,neoplasm...

CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Gene therapy...

CD44, glycosyltransferase or glycosidase, increasing engraftment potential of stem cell by; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells

Glycosylation...

CD44, modulating; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Intestine,neoplasm...

colon; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Muscular dystrophy...

Congenital; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Toxins...

diphtheria, HCELL antibody conjugates; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Selectins...

E-, CD62E, identifying stem cells using; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

cDNA sequences...

for human CD44H isoform (HCELL); CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Toxins...

HCELL antibody conjugates; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Tumor markers...

HCELL as; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

CD44(antigen)...

HCELL isoforms; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Sialic acids...

HECA-452 antibody binding to HCELL dependent on sialic acid moieties; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diag

Selectins...

identifying stem cells using; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Drug delivery systems...

immunoconjugates, using HCELL antibody; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Drug delivery systems...

immunotoxins, using HCELL antibody; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Transplant and Transplantation...

increasing engraftment potential of stem cell; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Heart,disease...

infarction; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Shear stress...

isolating stem cells binded to immobilized selectin using; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing diso

Blood... Bone marrow...

isolating stem cells from; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Selectins...

L-, CD62L, identifying stem cells using; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Selectins...

ligands; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Neoplasm...

metastasis, treating and preventing; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

Diagnosis...

mol.; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin

ligands), and uses for isolating stem cells and treating and diagnosing disorders

#### Antibodies and Immunoglobulins...

monoclonal, HECA-452, binds to HCELL (CD44H); CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

#### Protein sequences...

of human CD44H isoform (HCELL); CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

#### Prognosis...

or efficacy of treatment; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

#### Proteins...

PAP (pokeweed antiviral protein), conjugates, HCELL antibody; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing d

#### Exotoxins...

Pseudomonas, HCELL antibody conjugates; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

#### Carbohydrates, biological studies...

selectin binding determinants contain N- or O-linked carbohydrate moiety on HCELL; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and trea

#### Ligands...

selectin; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

#### Biomarkers...

stem cell; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

#### Brain, disease...

stroke; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

#### Susceptibility(genetic)...

to hematol. disorder; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

#### CAS REGISTRY NUMBERS:

895187-40-3 481237-40-5 amino acid sequence; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

56626-18-7 39279-34-0 Fucosyltransferase, modulating CD44 glycosylation using; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

9032-92-2 glycosidase, increasing affinity of cell for selectin using; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

9033-07-2 glycosyltransferase, increasing affinity of cell for selectin using; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

75037-46-6D 95787-44-3D HCELL antibody conjugates, CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for

isolating stem cells and treating and diagnosing disorders  
2438-80-4 HECA-452 antibody binding to HCELL dependent on fucose moieties; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders  
398424-95-8 nucleotide sequence; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders  
111070-05-4 removal of fucose moieties from HCELL by, to decrease HECA-452 antibody binding; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders  
83534-39-8 removal of N-linked carbohydrate moieties from HCELL by; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders  
9001-67-6 removal of sialic acid moieties from HCELL by, to decrease HECA-452 antibody binding; CD44 glycoforms HCELLs (hematopoietic cell E-selectin/L-selectin ligands), and uses for isolating stem cells and treating and diagnosing disorders

3/7/20 (Item 4 from file: 399)  
DIALOG(R)File 399:CA SEARCH(R)  
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142480790 CA: 142(26)480790v PATENT  
Antibodies to HCELL glycoform of CD44  
INVENTOR(AUTHOR): Sackstein, Robert  
LOCATION: USA  
ASSIGNEE: Brigham and Women's Hospital, Inc.  
PATENT: PCT International ; WO 200546597 A2 DATE: 20050526  
APPLICATION: WO 2004US37138 (20041108) \*US 2003PV518353 (20031107)  
PAGES: 71 pp. CODEN: PIXXD2 LANGUAGE: English  
PATENT CLASSIFICATIONS:

CLASS: A61K-000/A  
DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NA; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RU; SC; SD; SE; SG; SK; SL; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA; ZM; ZW DESIGNATED REGIONAL: BW; GH; GM; KE; LS; MW; MZ ; NA; SD; SL; SZ; TZ; UG; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM; AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IS; IT; LU; MC; NL; PL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG

SECTION:  
CA215003 Immunochemistry  
CA214XXX Mammalian Pathological Biochemistry  
IDENTIFIERS: antibody CD44 antigen HCELL glycoform  
DESCRIPTORS:

Hematopoietic precursor cell...  
allograft; antibodies to HCELL glycoform of CD44 for enhancement of CD44(antigen)...  
antibodies to HCELL glycoform of  
Anti-inflammatory agents... Antitumor agents...  
antibodies to HCELL glycoform of CD44  
Immunotherapy...  
antibodies to HCELL glycoform of CD44 for  
Inflammation... Autoimmune disease... Blood vessel,disease... Neoplasm...  
antibodies to HCELL glycoform of CD44 for treatment of  
CA19-9 antigen...

antibodies to HCELL glycoform of CD44 in relation to  
Human...  
antibodies to HCELL glycoform of CD44 of  
Diagnosis...  
cancer; with antibodies to HCELL glycoform of CD44  
Antibodies and Immunoglobulins...  
chimeric; to HCELL glycoform of CD44 antigen  
Selectins...  
E-; antibodies to HCELL glycoform of CD44 modulate binding to  
Epitopes...  
for antibodies to HCELL glycoform of CD44  
Antibodies and Immunoglobulins...  
fragments; to HCELL glycoform of CD44 antigen  
Oligosaccharides, biological studies...  
fucose-containing; of epitope for antibodies to HCELL glycoform of CD44  
Antigens...  
HECA-452 (high endothelial cell antigen 452); antibodies to HCELL  
glycoform of CD44 in relation to  
Neoplasm...  
hematol.; antibodies to HCELL glycoform of CD44 for treatment of  
Antibodies and Immunoglobulins...  
humanized; to HCELL glycoform of CD44 antigen  
Animal cell line...  
KG-1a; antibodies to HCELL glycoform of CD44 of  
Selectins...  
L-; antibodies to HCELL glycoform of CD44 modulate binding to  
Blood-group substances...  
Lea, sialyl; antibodies to HCELL glycoform of CD44 in relation to  
Blood-group substances...  
Lex, sialyl; antibodies to HCELL glycoform of CD44 in relation to  
Antibodies and Immunoglobulins...  
monoclonal; to HCELL glycoform of CD44 antigen  
Sialooligosaccharides...  
of epitope for antibodies to HCELL glycoform of CD44  
Separation...  
of hematopoietic precursor cell using antibodies to HCELL glycoform of  
CD44  
Antibodies and Immunoglobulins...  
polyclonal; to HCELL glycoform of CD44 antigen  
Immunostimulation... Prophylaxis...  
with antibodies to HCELL glycoform of CD44  
CAS REGISTRY NUMBERS:  
9004-61-9 antibodies to HCELL glycoform of CD44 modulate binding to

3/7/21 (Item 5 from file: 399)  
DIALOG(R)File 399:CA SEARCH(R)  
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137017447 CA: 137(2)17447w PATENT  
Hematopoietic cell E-selection/L-selectin ligand polypeptides and methods  
of use thereof  
INVENTOR(AUTHOR): Sackstein, Robert  
LOCATION: USA  
ASSIGNEE: The Brigham and Women's Hospital, Inc.  
PATENT: PCT International ; WO 200244342 A2 DATE: 20020606  
APPLICATION: WO 2001US51014 (20011018) \*US PV240987 (20001018) \*US  
PV297474 (20010611)  
PAGES: 94 pp. CODEN: PIXXD2 LANGUAGE: English  
PATENT CLASSIFICATIONS:  
CLASS: C12N-000/A

DESIGNATED COUNTRIES: CA; JP DESIGNATED REGIONAL: AT; BE; CH; CY; DE; DK  
, ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; TR

SECTION:

CA209016 Biochemical Methods  
CA201XXX Pharmacology  
CA203XXX Biochemical Genetics  
CA206XXX General Biochemistry  
CA213XXX Mammalian Biochemistry  
CA214XXX Mammalian Pathological Biochemistry

IDENTIFIERS: hematopoietic cell selectin ligand peptide sequence cancer  
drug immunoassay

DESCRIPTORS:

Ricins...

A; hematopoietic cell E-selection/L-selectin ligand polypeptides and  
methods of use thereof

Blood...

cancer; hematopoietic cell E-selection/L-selectin ligand polypeptides  
and methods of use thereof

Muscular dystrophy...

congenital; hematopoietic cell E-selection/L-selectin ligand  
polypeptides and methods of use thereof

Bond...

covalent; hematopoietic cell E-selection/L-selectin ligand polypeptides  
and methods of use thereof

Toxins...

diphtheria; hematopoietic cell E-selection/L-selectin ligand  
polypeptides and methods of use thereof

Hematopoiesis...

disorders; hematopoietic cell E-selection/L-selectin ligand  
polypeptides and methods of use thereof

Selectins...

E-; hematopoietic cell E-selection/L-selectin ligand polypeptides and  
methods of use thereof

Transplant and Transplantation...

engraftment potential; hematopoietic cell E-selection/L-selectin ligand  
polypeptides and methods of use thereof

Pseudomonas...

exotoxin; hematopoietic cell E-selection/L-selectin ligand polypeptides  
and methods of use thereof

Disease,animal...

genetic; hematopoietic cell E-selection/L-selectin ligand polypeptides  
and methods of use thereof

Sialic acids...

groups; hematopoietic cell E-selection/L-selectin ligand polypeptides  
and methods of use thereof

Antibodies...

HCELL; hematopoietic cell E-selection/L-selectin ligand polypeptides  
and methods of use thereof

Hematopoietic precursor cell... Ligands... Inflammation... Neoplasm...

Mammalia... Protein sequences... Immunoassay... CD44(antigen)... Antibodies  
... Immobilization,molecular... Shear stress... Blood analysis...

Erythrocyte... Bone marrow... Affinity... Nucleic acids... Human... Drug  
screening... Parkinson's disease... Diabetes mellitus... Liver,disease...

Toxins... Genetic methods... Molecular recognition... Molecular association

...

hematopoietic cell E-selection/L-selectin ligand polypeptides and  
methods of use thereof

Heart,disease...

infarction; hematopoietic cell E-selection/L-selectin ligand  
polypeptides and methods of use thereof

Selectins...

L-; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
Antibodies...  
monoclonal, GECA-452; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
Carbohydrates,processes...  
N-linked groups; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
Proteins...  
PAP ( pokeweed antiviral protein); hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
Peptides,uses...  
polypeptides, glycosylated; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
Therapy...  
stem cell; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
Hematopoietic precursor cell...  
stem; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
Brain,disease...  
stroke; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
CAS REGISTRY NUMBERS:  
434529-63-2 amino acid sequence; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
83534-39-8 9001-67-6 111070-05-4 9033-07-2 9032-92-2 95787-44-3  
75037-46-6 hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
2438-80-4 moieties; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
434530-60-6 434530-61-7 434530-62-8 434530-63-9 434530-64-0  
434530-65-1 unclaimed sequence; hematopoietic cell E-selection/L-selectin ligand polypeptides and methods of use thereof  
?  
PLEASE ENTER A COMMAND OR BE LOGGED OFF IN 5 MINUTES  
? ds

Set	Items	Description
S1	210	E1-E7
S2	34	S1 AND (HCELL)
S3	21	RD S2 (unique items)